

ABSTRACT**Fabrication of a FeRAM Capacitor Using a Noble Metal Hardmask**

5 A ferroelectric capacitor is fabricated using a noble metal hardmask. A hardmask is deposited on a top electrode of a capacitor stack comprising a ferroelectric layer sandwiched between the top electrode and a bottom electrode. The top electrode is patterned according to the pattern of the hardmask by etching at a first temperature. The top electrode serves as the 10 noble metal hardmask and the ferroelectric layer is patterned according to the pattern of the top electrode at a second temperature lower than the first temperature, resulting in the top electrode having sidewalls beveled relative to a top surface of the top electrode etching. The bottom electrode is etched at a third temperature to form the capacitor.

15

Fig. 6